

## AN AUDIO STEREO PROCESSING METHOD, DEVICE AND SYSTEM

## FIELD OF THE INVENTION

The present invention relates to a method, a device and a system for processing an audio stereo signal, and in

5 particular the present invention relates to a method, device and system for processing an input audio stereo signal.signal  
~~in accordance with the preamble of claims 1, 14 and 27,~~  
~~respectively.~~

## BACKGROUND OF THE INVENTION

10 A large number of methods and systems exist intended for faithful reproduction of the sound experienced by a listener at the recording position. The system coming closest to virtually move the listener to the recording location, i.e. to convey an impression of the true location of the different

15 sound sources of the original event, is the binaural method of recording and the binaural method of reproduction (headphones). This method has as its shortcomings in that the sound is interpreted by ear canals both in the recording stage and in the reproduction stage and in a worst case even by two

20 sets of pinna (outer ears) on its way to the listeners brain where the sound information is to be interpreted. There are solutions that utilize a simplified recording method including a foam ball of head size with the microphone elements on each side of the ball instead of a replica of a head. This is a

25 compromise to gain sound quality but loses the distinction of localization between front and back and the elevation. All other ways than the binaural method to record and reproduce sound is a creation of an imaginary sound image that is truly subjective. This is the case for both the recording stage and

30 the reproduction stage.

between the mid and side signals appearing in the audio reproduction stage, the attenuated mid signal is added to both the first and the second intermediate signals, so as to form the output audio stereo signal, and the output stereo signal 5 is directed to an audio stereo signal reproduction system comprising a pair of loudspeaker units located in close proximity to each other. The system described in WO01/39548 allows an audio stereo signal to be reproduced with a high degree of fidelity with high consistency in the perceived 10 stereo image regardless of the quality of system.

A problem with such a system with closely located loudspeaker units, however, is that at high frequencies, above 1-5 kHz, the degree of fidelity in perceived stereo effect degrades or vanishes totally.

15 SUMMARY OF THE INVENTION

It is an object of the present invention to provide a method for processing an audio stereo signal, which solves the above mentioned problem. ~~This object is achieved by a method as defined in the characterising portion of claim 1.~~

20 Another object of the present invention is to provide a device for processing an audio stereo signal, which solves the above mentioned problem. ~~This object is achieved by a device as defined in the characterising portion of claim 14.~~

Another object of the present invention is to provide a system 25 for processing an audio stereo signal, which solves the above mentioned problem. ~~This object is achieved by a system as defined in the characterising portion of claim 27.~~

According to the present invention, a left output signal for 30 transmission to a left loudspeaker in a loudspeaker pair is produced, which signal is, or is equivalent to, the sum of a